

WHAT IS CLAIMED IS:

1. A reproduced signal equalizing method for optical information media in which reproduced signals obtained by irradiating laser light to an optical information medium are equalized so as to bring a waveform thereof close to a waveform having a predetermined characteristic, the method comprising the steps of:

sampling reproduced signals in a predetermined cycle;

calculating an equalization coefficient for producing a smallest difference between a target waveform and an equalized waveform by the least square technique by using a predetermined number or more of sampled waveform data; and

equalizing reproduced signals by using the calculated equalization coefficient.

2. A reproduced signal equalizing method for optical information media according to Claim 1, wherein the number of the sampled waveform data is 3000 or more.

3. A reproduced signal equalizing method for optical information media according to Claim 1, the method further comprising the steps of:

inputting the reproduced signals sampled in the predetermined cycle to a Viterbi decoder; and

defining a target waveform as a waveform resulting from equalization of the reproduced signals based on binarized data demodulated by the Viterbi decoder and a partial response waveform.

4. A reproduced signal equalizing method for optical information media according to Claim 3, wherein a partial response value (1,2,2,2,1) is used as the partial response waveform.

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5. An optical information reproducing apparatus having a function for equalizing reproduced signals by using a reproduced signals equalizing method according to Claim 1.

6. A signal quality evaluating method, comprising the steps of:
equalizing reproduced signals by using a reproduced signal equalizing method according to Claim 1; and
evaluating quality of the reproduced signals from the equalized reproduced signals and binary identification data.

7. A writing condition adjusting method, wherein a recording condition is adjusted based on an evaluation result of a signal quality evaluation method according to Claim 6.

8. A reproduced signal equalizing method for optical information media in which reproduced signals obtained by irradiating laser light to an optical information medium are equalized so as to bring a waveform thereof close to a waveform having a predetermined characteristic, the method comprising the steps of, in order to read out information recorded on the optical information medium:

equalizing a predetermined number of samples of the reproduced signals by using a predetermined initial filter coefficient and generating a first equalized signal;

identifying the first equalized signal by using a Viterbi decoder and obtaining a provisional identification result therefrom;

generating a target signal from the provisional identification result and a predetermined partial response waveform;

calculating a filter coefficient for producing a small difference between the target signal and the reproduced signals about the predetermined number of samples;

equalizing the reproduced signals by using the calculated filter coefficient

and generating a second equalized signal; and

identifying the second equalized signal by using the Viterbi decoder.

9. A reproduced signal equalizing method for optical information media according to Claim 8, wherein the predetermined number of samples is a number selected from 3,000 to 10,000.

10. A reproduced signal equalizing method for optical information media in which reproduced signals obtained by irradiating laser light to an optical information medium are equalized so as to bring a waveform thereof close to a waveform having a predetermined characteristic, the method comprising the steps of, in order to calculate an equalization coefficient for an equalizer used for reproducing binary signals recorded on the optical recording medium:

equalizing a predetermined number of samples of the reproduced signals by using a predetermined initial equalization coefficient and generating a first equalized signal;

identifying the first equalized signal by using a Viterbi decoder and obtaining a provisional identification result therefrom;

generating a target signal from the provisional identification result and a predetermined partial response waveform; and

calculating an equalization coefficient for producing a small difference between the target signal and the reproduced signals about the predetermined number of samples.

11. A reproduced signal equalizing method for optical information media according to Claim 10, wherein the predetermined number of samples is a number selected from 3,000 to 10,000.

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